Status of Cassini/Huygens Bibliography

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Cassini/Huygens Bibliography

- Goal: Compile a bibliography of all Cassini and Huygens papers
- Make it available on Science Planning web page
- Archive in Planetary Data System (PDS) as reference.cat file
  - PDS has a search engine available which also allows you to create your own reference.cat file based upon the entire catalog which can be included with your archive data set inputs to PDS.
    - http://pdsproto.jpl.nasa.gov/Onlinecatalog/public.cfm

Bibliography Status

- Propose two separate reference files
  - One for Cassini / Huygens papers only
  - The second would contain all papers relevant to the Saturn system.

Bibliography Status

- Bibliography material received from:
  - RPWS (Bill Kurth)
  - DWE (Michael Bird) in PDS format!!
  - HASI & SSP (Louise Hobbs)
  - LISA's group (François Raulin)
  - Nature, 28 Feb 2002 (Dennis Matson)
- First cut of the bibliography will be available for review in June.
- Diane Conner is heading up bibliography effort
  - Email inputs to: Diane.Conner@jpl.nasa.gov

Example PDS Formatted Reference

To give you an idea of the information needed for the Bibliography, an example PDS formatted reference for an JGR paper is shown below. The issue number and identifier, and page numbers are included.

```
OBJECT = REFERENCE
REFERENCE_KEY_ID = "LORENZETAL2001"
REFERENCE_DESC = "Lorenz, R.D., C. Elachi, R.D. West, W.T.K.
   Johnson, M.A. Janssen, M. Moghaddam, G.A. Hamilton, O.
   Liepack, A. Bunker, L.E. Roth, S.D. Wall, L. Dente, D.
   Casarano, and F. Posa, Cassini Radio Detection and Ranging
   (RADAR): Earth and Venus Observations, Journal of
   Geophysical Research - Space Physics (2001JA900035), Vol.
   106, No. A12, pp. 30,271, 1 December 2001."
END_OBJECT = REFERENCE
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The activity described in this paper was carried out at the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

	Product Type	Science Data Product Description	SIS ID	CODMAC Level	PDS Format IMG, etc..	Prime PDS Node Interface	PDS node to copy or maintain data	Producer	Supplier to PDS	Estimated Data Set Size	COMMENTS
1	CAPS_ACT				CDF	PPI				284MB/Year	
2	CAPS_ELS					PPI				15GB/Year	
3	CAPS_HSK					PPI				600MB/Year	
4	CAPS_IBS					PPI				12GB/Year	
5	CAPS_IMS					PPI				53GB/Year	
6	CDA_MA_STAT	Instrument status with time for mass spectrum analyzer (MA) component of CDA			table	SBN				100 MB	
7	CDA_DA_STAT	Instrument status with time for Dust Analyser (DA) component of CDA			table	SBN				100 MB	
8	CDA_HRD_STAT	Instrument status with time for High rate detector (HRD) component of CDA			table	SBN				100 MB	
9	CDA_ANGLE	CDA articulation angle with time, merged with S/C orientation information			table	SBN				10 MB	
10	CDA_MA_CAL_AREA	Sensitive area of MA as a function of particle incidence angle			table	SBN				10 kB	
11	CDA_DA_CAL_AREA	Sensitive area of DA as a function of particle incidence angle			table	SBN				10 kB	
12	CDA_HRD_CAL_AREA	Sensitive area of HRD as a function of particle incidence angle			table	SBN				10 kB	
13	CDA_MA_CAL_THR	Detection threshold table for MA as a function of mass, velocity, charge (incidence angle?)			table	SBN				10 MB	Actually, one has to specify the threshold dependency for each chemical species. Furthermore, the thresholds seem to depend on the overall chemical
14	CDA_DA_CAL_THR	Detection threshold table for DA as a function of mass, velocity, charge, chemical composition,			table	SBN				10 MB	
15	CDA_HRD_CAL_THR	Detection threshold table for HRD as a function of mass, velocity, charge,			table	SBN				10 MB	HRD threshold will only depend upon incidence angle for collimated flux source.

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16	CDA_MA_EVENT	CDA mass spectrometer instrumental output and mass spectra for impact events			table	SBN				10 GB	This product may be broken down into individual files corresponding to individual impacts. Interpretation of instrumental responses is in progress. Additional files necessary to convert instrumental output to mass spectra may be included as needed.
17	CDA_DA_EVENT	CDA dust analyzer instrumental output and masses, velocities, and charges for impact events			table	SBN				10 GB	Additional files necessary to convert instrumental output to mass, velocity, and charge may be included as needed.
18	CDA_HRD_EVENT	CDA high rate detection system instrumental output and masses, velocities, charges, incidence angle, and impact target for impact events			table	SBN				1 GB	Additional files necessary to convert instrumental output to mass, velocity, and charge may be included as needed.
19	CIRS_OBS	observation parameters		2	table	Atmos	Rings	CIRS	CIRS PI	1 MB/mon	
20	CIRS_IFGM	uncompressed, raw interferogram data		2	table	Atmos	Rings	CIRS	CIRS PI	682 MB/mon	
21	CIRS_HK	Housekeeping Data		2	table	Atmos	Rings	CIRS	CIRS PI	4 MB/mon	
22	CIRS_GEO	spacecraft orientation w.r.t. target, sun		2	table	Atmos	Rings	CIRS	CIRS PI	32 MB/mon	
23	CIRS_POI	pointing information for detectors on target		2	table	Atmos	Rings	CIRS	CIRS PI	236 MB/mon	
24	CIRS_RIN	pointing information for detectors on rings		2	table	Atmos	Rings	CIRS	CIRS PI	200 MB/mon	
25	CIRS_FIFM	Interferograms filtered for RF interference, pickup etc		2	table	Atmos	Rings	CIRS	CIRS PI	1345 MB/mon	
26	CIRS_AIFM	averaged reference interferograms (deep space, warm shutter)		4	table	Atmos	Rings	CIRS	CIRS PI	42.5 MB/mon	
27	CIRS_SPM	calibrated individual spectra		4	table	Atmos	Rings	CIRS	CIRS PI	489 MB/mon	
28	INMS_DD	High sensitivity counter stream. Low sensitivity,Counter stream,68 values per mass scan				PPI					
29	INMS_AB	Composition as a function of time			Table ??	PPI					
30	INMS_HL	Higher level data for each species number density scale height temperature				PPI					

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31	MAG_TABLE	L1A data (duplicates removed, gaps filled, idiosyncrasies of onboard data processing unit fixed, data separated into files		2	Time series binary TABLE	PPI		MAG	MAG PI	75 Gbytes	Flatfile format, size estimate includes cruise data.
32	MAG_SW	software to convert L1A to L1B		6	TEXT, binary FILE	PPI		MAG	MAG PI	500 Mbytes	Mixture of text files (e.g. source code) and binary files (e.g. executables). Does not include spice libraries (assumed available elsewhere)
33	MAG_CAL	Calibration files		6	binary TABLE	PPI		MAG	MAG PI	500 Mbytes	Offset files in flatfile format. Does not include kernal files (instrument, leap second, sclkscet, spacecraft and planetary ephemerides –assumed available elsewhere).
34	MIMI_LEMMS_PHA	Level 1A PHA data from the MIMI LEMMS sensor in comma delimited, time ordered, ASCII science records		2	ASCII	PPI		MIMI	MIMI PI	30 MB / Day Maximum	
35	MIMI_LEMMS_RATE	Level 1A accumulator rate data from the MIMI LEMMS sensor in comma delimited, time ordered ASCII science records		2	ASCII	PPI		MIMI	MIMI PI	35 MB / Day Maximum	
36	MIMI_CHEMS_PHA	Level 1A PHA data from the MIMI CHEMS sensor in comma delimited, time ordered ASCII science records		2	ASCII	PPI		MIMI	MIMI PI	450 MB / Day Maximum	
37	MIMI_CHEMS_RATE	Level 1A accumulator rate data from the MIMI CHEMS sensor in comma delimited, time ordered ASCII science records		2	ASCII	PPI		MIMI	MIMI PI	7 MB / Day Maximum	
38	MIMI_INCA_PHA	Level 1A PHA data from the MIMI INCA sensor in comma delimited, time ordered ASCII science records		2	ASCII	PPI		MIMI	MIMI PI	300 MB / Day Maximum	
39	MIMI_INCA_RATE	Level 1A accumulator rates data from the MIMI LEMMS sensors in comma delimited, time ordered ASCII science records		2	ASCII	PPI		MIMI	MIMI PI	4 MB / Day Maximum	

	Product Type	Science Data Product Description	SIS ID	CODMAC Level	PDS Format IMG, etc..	Prime PDS Node interface	PDS node to copy or maintain data	Producer	Supplier to PDS	Estimated Data Set Size	COMMENTS
40	MIMI_INCA_IMAGE	Level 1A accumulator rates data from the MIMI LEMMS sensors in comma delimited, time ordered images represented as simple arrays.		2	ASCII	PPI		MIMI	MIMI PI	110 MB / Day Maximum	
41	RADAR_ARCDR	Decommuntated, time-ordered, calibrated vector data from radiometry, scatterometry, altimetry modes w/associated metadata. Also geometric & processing metadata for each SAR burst.	A	3	TAB	Imaging1		IO/RADAR	Radar TL	~800 MB2	Product produced by IO (according to TL-approved SIS), delivered to RADAR TL, who in turn archives to PDS
42	RADAR_BIDR	SAR data correlated, resampled to oblique cylindrical grid (different projection for each swath), looks summed	B	4	IMG	Imaging		IO/RADAR	Radar TL	~800 MB	Product produced by IO (according to TL-approved SIS), delivered to RADAR TL, who in turn archives to PDS. Includes lat-lon backplanes
43	RADAR_PRDR	Calibrated & gridded radiometer data	C	4	IMG	Imaging		USGS	Radar TL	~300 MB	Gridded maps containing single pass brightness temp data
44	RADAR_GSDR	Calibrated & gridded scatterometer data	C	4	IMG	Imaging		USGS	Radar TL	~300 MB	Gridded maps containing single pass echo parameter(s)
45	RADAR_GRDR	Mosaicked radiometer data	C	5	IMG	Imaging		USGS	Radar TL	~100 MB	Multipass radiom map
46	RADAR_MGSDR	Mosaicked scatterometer data	C	5	IMG	Imaging		USGS	Radar TL	~50 MB	Multipass scatterom maps
47	RADAR_MIDR	Mosaicked SAR image data	C	5	IMG	Imaging		USGS	Radar TL	~6500 MB2	Mosaics of SAR strips in common (nonoblique)
48	RADAR_RIDR	Multilook SAR "cubes"	C	5	IMG	Imaging		USGS	Radar TL	≤50 MB	Repeat SAR imaging of swath overlap areas, coregistered as layers in common projection
49	RADAR_DTM	Digital Topographic Models (DTMs)	C	5	IMG	Imaging		USGS	Radar TL	≤10 MB	Produced by radarclinometry and/or stereoanalysis
50	RADAR_SCI	Science analysis products	TBD	5	IMG, (and...?)	Imaging		CRST	Radar TL	?	Other products TBD, e.g. model emissivity from radiometry; model reflectivity/roughness from scatterometry modeling
51	RADAR_EPH	Control network & improved ephemerides	C	6	SPK, DBK, con-trol net	Imaging		USGS	Radar TL	<<1 MB, + 1 MB for feature thumbnails	Results of geodetic adjustment of SAR images: improved s/c ephemerides, ground coordinates of selected features, Titan spin params
52	RPWS_LRB	Low Rate Browse		4	Time Series	PPI		RPWS	RPWS	6.5 Gbytes	
53	RPWS_LRFRC	Low Rate Full Resolution Calibrated		3	Time Serries	PPI		RPWS	RPWS	65 Gbytes	
54	RPWS_WB	Wideband Browse		4	Time Series	PPI		RPWS	RPWS	1 Gbyte	

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55	RPWS_WBFR	Wideband Full Resolution Uncalibrated		2	Time Series	PPI		RPWS	RPWS	10 Gbytes	uncalibrated data sets will include with their metadata the algorithms and files necessary to calibrate the data. Special data sets will not be defined probably until after the beginning of tour.
56	RPWS_WVB	Waveform Browse		4	Time Series	PPI		RPWS	RPWS	1 Gbyte	
57	RPWS_WVFR	Waveform Full Resolution Uncalibrated		2	Time Series	PPI		RPWS	RPWS	10 Gbytes	uncalibrated data sets will include with their metadata the algorithms and files necessary to calibrate the data. Special data sets will not be defined probably until after the beginning of tour.
58	RPWS_SP	Special Data Sets		4+		PPI		RPWS	RPWS	1 Gbyte	
59	ISS_MIPS_UDR	UDR images		3	IMG	Imaging	Rings	IO/MIPL	ISS TL		generated by IO, delivered by ISS team
60	ISS_EDR	EDR images		4	IMG	Imaging	Rings	ISS TL	ISS TL		
61	ISS_CART	Cartographic data products				Imaging	Rings	ISS TL	ISS TL		Higher Level product
62	ISS_CAL	Calibration files		6		Imaging	Rings	ISS TL	ISS TL		
63	UVIS_SPEC	Spectra		2	Spectrum	Atmos	Rings	UVIS	UVIS PI	136mbytes	uncalibrated
64	UVIS_1WAV	Image at one wavelength		2	Image	Atmos	Rings	UVIS	UVIS PI	34mbytes	uncalibrated
65	UVIS_CUBE	Spatial and spectral cubes		2	Qube	Atmos	Rings	UVIS	UVIS PI	34gbytes	uncalibrated
66	UVIS_SSB	Solar and Stellar brightness time history		2	Time Series	Atmos	Rings	UVIS	UVIS PI	2mbytes	uncalibrated
67	UVIS_CAL	Calibration files & Algorthims		6		Atmos	Rings		UVIS		
68	VIMS_MIPS_UDR			2	ISIS Cube	JPL, Imaging		IO/MIPS	VIMS Team	Data set size estimates will be provided once the tour plan is done and SISs complete	
69	VIMS_CAL	calibration files		3	ISIS Cube	JPL, Imaging		VIMS Team	VIMS Team	Data set size estimates will be provided once the tour plan is done and SISs complete	
70	VIMS_SW	software to ?		N/A	?	USGS, Imaging		USGS Imaging/VIMS team	USGS Imaging/VIMS team	Data set size estimates will be provided once the tour plan is done and SISs complete	

	Product Type	Science Data Product Description	SIS ID	CODMAC Level	PDS Format IMG, etc..	Prime PDS Node Interface	PDS node to copy or maintain data	Producer	Supplier to PDS	Estimated Data Set Size	COMMENTS
71	RSS_DSP	Open-loop Radio Science Data (ODS), from DSP-R; digitized signal	DSN-011	1	Binary	RS Subnode		IO-RS *	RST	985.3 Mb	* Produced by DSN, IO-RS makes product available to RST; PDS labels generated by RST (to be retired after end of FY'01) GWE, and SCE System Tests only
72	RSS_RSR	Open-loop Radio Science Data (ODS), from RSR; digitized signal	DSN-026	1	Binary	RS Subnode		IO-RS *	RST	195.5 Gb	* Produced by DSN, IO-RS makes product available to RST; PDS labels generated by RST.
73	RSS_TDAF	Closed-loop Tracking Data (DSMS TDAF); uplink and downlink carrier and range phase	DSN-025	1,2,3,4	Binary	RS Subnode		Tracking Data Delivery Subsystem (TDDS)	RST	2312.0 Mb	PDS labels generated by RST (begins with NSP implementation – assume ~SOI)
74	RSS_ATDF	Closed-loop Tracking Data (ATDF, and Ka-up/Ka-down "ATDF"); Doppler, range, and ramps	DSN-023	2	Binary	RS Subnode		Radio Metric Data Conditioni ng Team (RMDCT)	RST	9862.3 Mb	PDS labels generated by RST (no longer generated after NSP)
75	RSS_ODF	Orbit Data File (ODF); Doppler, range, and ramps	DSN-001	4	Binary	RS Subnode		RMDCT	RST	1233.5 Mb	PDS labels generated by RST (no longer generated after NSP)
76	RSS_EOP	EOP – Earth Orientation Parameters File	DSN-004	6	ASCII	RS Subnode		TSAC	RST	207.4 Mb	PDS labels generated by RST
77	RSS_MCF	MCF - Media Calibration Files	DSN-005	6	ASCII	RS Subnode		TSAC	RST	1.2 Mb	PDS labels generated by RST
78	RSS_AMCF	AMCF - Advanced Media Calibration Files	DSN-005	6	ASCII	RS Subnode		IO-RS	RST	1036.8 Mb	
79	RSS_MON	Mission Monitor Data	DSN-027	6	ASCII	RS Subnode		IO-RS	RST	12.2 Gb	PDS labels generated by RST
80	RSS_SPK	SP-Kernel; spacecraft and planetary ephemeides	NAV-009	6	Binary	RS Subnode		SCO	RST	391.7 Mb	PDS labels generated by RST
81	RSS_CK	C-Kernel	NAV-005	6	Binary	RS Subnode		SCO	RST	900.0 Mb	PDS labels generated by RST
82	RSS_TLM	RFS/RFIS engineering telemetry	TLM-007	6	ASCII	RS Subnode		IO-RS	RST	30.4 Gb	
83	RSS_USO_CAL	Ultrastable Oscillator Characterization reports	N/A	6	ASCII	RS Subnode		IO-RS	RST	N/A	USOC experiment only
84	RSS_HGA_PAT	High Gain Antenna (HGA) Pattern reports	N/A	6	ASCII	RS Subnode		IO-RS	RST	N/A	HGAC experiement only
85	RSS_HGA_CAL	High Gain Antenna (HGA) Boresight Alignment reports	N/A	6	ASCII	RS Subnode		IO-RS	RST	N/A	The HGA Boresight Alignment is part of the Frames kernel produced by IO. HGAC experiment only
86	RSS_SCI	Radio Science Team Products (Calibrated, Resampled, and Derived data sets)	N/A	5	N/A	RS Subnode		Radio Science Team (RST)	RST	N/A	Higher Level products; while not contractually required, archival of RST-generated higher-level data products into PDS is

	Product Type	Science Data Product Description	SIS ID	CODMAC Level	PDS Format IMG, etc..	Prime PDS Node interface	PDS node to copy or maintain data	Producer	Supplier to PDS	Estimated Data Set Size	COMMENTS
	1 All RADAR products to be ingested through Imaging Node, with input from Geophysics Node; copies to be maintained by both Nodes.										
	2 All RADAR data volumes assume 30 passes dedicated to RADAR observations, with radiometric operations on 6 of these passes.										
	3 xxxx is TBD and depends on how the UVIS data sets are ultimately defined										

Data Set ID
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0

Data Set ID
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-D-CCDA-5-V1.0
CO-CIRS-2/4-CSDR-V1.0
CO-CIRS-2/4-CSDR-V1.0
CO-CIRS-2/4-CSDR-V1.0
CO-CIRS-2/4-CSDR-V1.0
CO-CIRS-2/4-CSDR-V1.0
CO-CIRS-2/4-CSDR-V1.0
CO-CIRS-2/4-CSDR-V1.0
CO-CIRS-2/4-CSDR-V1.0
CO-CIRS-2/4-CSDR-V1.0

Data Set ID
CO-E/J/S-MIMI-2-LEMMS-LEVEL1A-V1.0
CO-E/J/S-MIMI-2-LEMMS-LEVEL1A-V1.0
CO-E/J/S-MIMI-2-CHEMS-LEVEL1A-V1.0
CO-E/J/S-MIMI-2-CHEMS-LEVEL1A-V1.0
CO-E/J/S-MIMI-2-INCA-LEVEL1A-V1.0
CO-E/J/S-MIMI-2-INCA-LEVEL1A-V1.0

Data Set ID
CO-E/J/S-MIMI-2-INCA-LEVEL1A-V1.0
CO-SSA-RADAR-3-ARCDR-V1.0
CO-SSA-RADAR-4-BIDR-V1.0
CO-SSA-RADAR-4-PRDR-V1.0
CO-SSA-RADAR-4-GSDR-V1.0
CO-SSA-RADAR-5-GRDR-V1.0
CO-SSA-RADAR-5-GSDR
CO-SSA-RADAR-5-MIDR-V1.0
CO-SSA-RADAR-5-RIDR-V1.0
CO-SSA-RADAR-5-DTM-V1.0
RADAR-TBD
RADAR-TBD

Data Set ID
CO-S-UVIS-2-xxxx-V1.0s 3
CO-S-UVIS-2-xxxx-V1.0s
CO-S-UVIS-2-xxxx-V1.0s
CO-S-UVIS-2-xxxx-V1.0s
CO-S-UVIS-2-xxxx-V1.0s

Data Set ID

Data Set ID

Product Type	Science Data Product Description	SIS ID	CODMAC Level	PDS Format IMG, etc..	Primary PDS Discipline Node	Secondary PDS Discipline Node	Producer	Supplier to PDS (if not producer)	Estimated Data Set Size	COMMENTS	Data Set ID
ACP_CAL	Baselines and sensitivity offsets				Atmos						
ACP_RAW					Atmos						
ACP_DESCENT	Probe Descent Data. Pressure, temperature and altitude.				Atmos						
ACP_TEMPVOLT	Forward, Backward and Electronics Temperature Sensor Readings in degrees C, and in Counts				Atmos						
ACP_GAIN	Gain of XX Electronics				Atmos						
ACP_CONTAM	Contamination Channel Readings, Counts.				Atmos						
ACP_SCATTER	Scatter Data, Counts.				Atmos						
ACP_FITTEMP	Fitted Temperature Profiles				Atmos						
DISR-CAL					Imaging	Atmos, Rings					
DISR_SPECTRA	Spectra				Imaging	Atmos, Rings					
DISR_CUBE	Spacial and spectral cubes				Imaging	Atmos, Rings					
DISR_IMAGE	Images				Imaging	Atmos, Rings					
DWE_CAL					Atmos						
DWE_WIND	velocity and direction				Atmos						
DWE_RESID	time from entry, time from link lock, altitude, pressure, and frequency residuals after the wind retrieval.				Atmos						
DWE_RADIO	Probe NCO frequency vs. time from lock				Atmos						
DWE_PROBE_DYNAMICS	Probe spin rate and spin phase during descent, location and orientation during descent and after				Atmos						
GCMS_CAL					Atmos						
GCMS_ATMOS_COMP	Atmospheric composition				Atmos						
HASI_CAL	Calibration				Atmos						
HASI_ACCEL	Entry sequence acceleration measurements				Atmos						
HASI_DESCENT	atmospheric density, pressure, and temperature				Atmos						

Product Type	Science Data Product Description	SIS ID	CODMAC Level	PDS Format IMG, etc..	Primary PDS Discipline Node	Secondary PDS Discipline Node	Producer	Supplier to PDS (if not producer)	Estimated Data Set Size	COMMENTS	Data Set ID
HASI_ALT	Atmospheric electric conductivity and DC electric fileds and lightning; acousitc noise due to turbulences or storms; radar echoes				Atmos						
HASI_SURFACE	Nature of Surface				Atmos						
SSP_CAL					Atmos						
SSP_ACCEL	Impact Characteristics				Atmos						
SSP_SOUND	Velectity and sonar-type sounder				Atmos						
SSP_SURFACE	Liquid surface density, electrical permittivity, refactive qualities, and temperature and thermal properties				Atmos						